

REMARKS/ARGUMENTS

This is a Response to the Office Action mailed December 19, 2005, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire March 19, 2006. Claims 1-15 and 35-51 were withdrawn by the Applicant in his September 14, 2004, Response to the Restriction Requirement of August 12, 2004. Claim 16 was amended by the Applicant in his March 30, 2005, Response to the Office Action of November 30, 2004. The Director is authorized to charge any additional fees due by way of this Response, or credit any overpayment, to our Deposit Account No. 19-1090. Claims 16-34 remain pending.

1. Office Action is Non-Final

The Office Action Summary page indicates that this Office Action is a Final Office Action, since box 2a is checked. However, the Detailed Action, at page 4, paragraph 5, states that "new ground(s) of rejection" are presented for the first time in the present Office Action. Furthermore, the Detailed Office Action does not indicate anywhere that this Office Action is Final. Therefore, the Applicant assumes that the present Office Action is Non-Final, and that the Office Action Summary page, at box 2a, was inadvertently checked (thereby incorrectly indicating that the present Office Action is Final).

In the Applicant's Response to the Office Action of dated July 12, 2005, no information disclosure statement was filed. Furthermore, no claim amendments were made in the Applicant's Response to the Office Action of dated July 12, 2005. MPEP 706.07(a) specifies that a subsequent action shall not be final "if the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement..." Accordingly, the new grounds of rejection used in the present Office Action were not necessitated by Applicant's amendment of the claims nor based on information submitted in an information disclosure statement. Therefore, the present Office Action should be a Non-final Office Action.

2. Nonstatutory Obviousness-Type Double Patent Rejection

The Office Action has rejected claims 16-34 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-31 of U.S. Patent No. 6,573,682 B1.

Applicant is submitting herewith a terminal disclaimer pertaining to U.S. Patent No. 6,573,682 B1. Accordingly, the nonstatutory obviousness-type double patent rejection to claims 16-34 should be withdrawn.

3. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, at page 3, paragraph 4, claims 16-34 stand rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent 3,823,358, hereinafter *Rey*, in view of U.S. Patent 6,255,008, hereinafter *Iwase*, and in further view of U.S. Patent 6,214,484, hereinafter *Hauer*. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. §103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements/features/steps of the claim at issue. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981).

a. Independent Claim 16

Independent claim 16 is allowable for at least the reason that the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not disclose, teach, or suggest at least the feature of “a regulating circuit for linearly regulating current through the series pass element in response to a greater of a battery charging current error, a battery voltage error and a stack current error” as recited in claim 16 (emphasis added).

*Rey* does not disclose, teach, or suggest using at least a “regulating circuit for linearly regulating current through the series pass element in response to a greater of a battery charging current error, a battery voltage error and a stack current error.” *Rey* is apparently limited to, at most, a system wherein “an auxiliary storage battery or other DC rechargeable power source is connected in parallel with a fuel cell” (Abstract). Nowhere is there any

disclosure, teaching, or suggestion in *Rey* determining three different errors (*i.e.*, battery charging current, battery voltage, and stack current). Furthermore, *Rey* does not teach or suggest regulating current based on the greater of the three errors. Thus, *Rey* fails to disclose, teach, or suggest every element of the Applicant's claimed invention.

Similarly, both *Iwase* and *Hauer* fail to disclose, teach, or suggest determining three different errors (*i.e.*, battery charging current, battery voltage, and stack current), and then regulating current based on the greater of the three errors as recited in claim 16. Thus, both *Iwase* and *Hauer* fail to disclose, teach, or suggest every element of the Applicant's claimed invention.

Even if *Rey* is modified by both *Iwase* and *Hauer*, the modified *Rey* system would not use three different errors (*i.e.*, battery charging current, battery voltage, and stack current) and then regulate current based on the greater of the three errors. Accordingly, the Office Action has not made a *prima facie* showing of obviousness using the proposed combination of *Rey* in view of *Iwase* and *Hauer*. Thus, independent claim 16 is not obvious under the proposed combination of *Rey* in view of *Iwase* and *Hauer* and the rejection should be withdrawn.

b. Independent Claims 20, 30, and 32

Independent claim 20 is allowable for at least the reason that the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not disclose, teach, or suggest at least the feature of a "regulating circuit coupled to the series pass element to regulate a current through the series pass element in *proportion* to *at least a greater of a difference between a battery charging current and a battery charging current limit, a difference between a battery voltage and a battery voltage limit, and a difference between a stack current and a stack current limit*" as recited in claim 20 (emphasis added).

Independent claim 30 is allowable for at least the reason that the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not disclose, teach, or suggest at least the feature of a "means for determining a greater of a difference between a battery charging current and a battery charging current limit, a difference between a battery voltage and a battery voltage limit, and a difference between a stack current and a stack current limit" and the feature of a

“series pass regulating means for regulating a flow of stack current through a blocking diode in proportion to the determined greater difference” as recited in claim 30.

Finally, independent claim 32 is allowable for at least the reason that the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not disclose, teach, or suggest a “means for determining a difference between a battery charging current and a battery charging current limit; means for determining a difference between a battery voltage and a battery voltage limit; and means for determining a difference between a stack current and a stack current limit; and series pass regulating means for regulating a flow of stack current through a blocking diode in response to the greater of the determined differences” as recited in claim 32.

*Rey* does not disclose, teach, or suggest the above-recited features of claims 20, 30, or 32. *Rey* is apparently limited to, at most, a system wherein “an auxiliary storage battery or other DC rechargeable power source is connected in parallel with a fuel cell” (Abstract). Thus, *Rey* fails to disclose, teach or suggest every element of the Applicant’s claimed invention.

Similarly, both *Iwase* and *Hauer* fail to disclose, teach, or suggest three differences (*i.e.*, a difference between a battery charging current and a battery charging current limit, a difference between a battery voltage and a battery voltage limit, and a difference between a stack current and a stack current limit), and then regulating current *in proportion to the greater of the three differences* as recited in claims 20 or 30, or regulating current *in response to the greater of the three differences* as recited in claim 32.

Even if *Rey* is modified by both *Iwase* and *Hauer*, the modified *Rey* system would not use the three differences to regulate current in proportion to, or in response to, the greater of the three differences as recited in claims 20, 30, or 32. Accordingly, the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not teach, disclose, or suggest at least the above-recited features of claims 20, 30, or 32. Therefore, a *prima facie* case establishing an obviousness rejection by *Rey* in view of *Iwase* and *Hauer* has not been made. Thus, independent claims 20, 30, and 32 are not obvious under the proposed combination of *Rey* in view of *Iwase* and *Hauer* and the rejection should be withdrawn.

c. Independent Claim 25

Applicant respectfully submits that independent claim 25 is allowable for at least the reason that the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not disclose, teach, or suggest at least the feature of “a battery charging current error integrator having ... an output to supply a battery current error signal proportional to a difference between the battery charging current and the battery charging current limit,” “a battery voltage error integrator having ... an output to supply a battery voltage error signal proportional to a difference between a battery voltage and a battery voltage limit,” or “a stack current error integrator having ... an output to supply a stack current error signal proportional to a difference between a stack current and a stack current limit.” Further, the proposed combination of *Rey* in view of *Iwase* and *Hauer* does not disclose, teach, or suggest at least the feature of “a series pass element having a pair of terminals for selectively providing a current path and a control terminal coupled to the OR circuit for regulating current through the current path in proportion to a greater of the *battery current error signal*, the *battery voltage error signal* and the *stack current error signal*” as recited in claim 25 (emphasis added).

*Rey* does not disclose, teach, or suggest using at least the above-recited features of claim 25. Thus, *Rey* fails to disclose, teach or suggest every element of the Applicant’s claimed invention.

Similarly, both *Iwase* and *Hauer* fail to disclose, teach, or suggest three different error signals (*i.e.*, a battery current error signal proportional to a difference between a battery charging current and a battery charging current limit, a battery voltage error signal proportional to a difference between a battery voltage and a battery voltage limit, and a stack current error signal proportional to a difference between a stack current and a stack current limit), and regulating current in proportion to the greater of the three error signals as recited in claim 25. Thus, both *Iwase* and *Hauer* fail to disclose, teach, or suggest every element of the Applicant’s claimed invention.

Even if *Rey* is modified by both *Iwase* and *Hauer*, the modified *Rey* system would not use the three different error signals to regulate current in proportion to the greater of the three different error signals as recited in claim 25. Accordingly, the proposed combination of *Rey* in

view of *Iwase* and *Hauer* does not teach, disclose, or suggest at least the above-recited features of claim 25. Therefore, a *prima facie* case establishing an obviousness rejection by *Rey* in view of *Iwase* and *Hauer* has not been made. Thus, independent claim 25 is not obvious under the proposed combination of *Rey* in view of *Iwase* and *Hauer* and the rejection should be withdrawn.

d. Dependent Claims 17-19, 21-24, 26-29, 31 and 33-34

Because independent claim 16 is allowable over the cited art of record, dependent claims 17-19 (which depend from independent claim 16) are allowable as a matter of law for at least the reason that the dependent claims 17-19 contain all features/elements of independent claim 16. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Similarly, because independent claims 20, 25, and 30 are allowable over the cited art of record, dependent claims 21-24 (which depend from independent claim 20), claims 26-29 (which depend from independent claim 25), claim 31 (which depends from independent claim 30), and claims 33-34 (which depend from independent claim 32) are allowable as a matter of law for at least the reason that these dependent claims contain all features/elements of their respective independent base claim. Accordingly, the rejection to these claims should be withdrawn.

e. Additional Argument for Allowability of Claim 17

With respect to claim 17, *Rey* does not disclose, teach, or suggest using at least “a battery charging current error integrator,” “a battery voltage error integrator,” or “a stack current error integrator” as recited in claim 17.

The Office Action alleges that *Iwase* “teaches a battery charging current error integrator, a battery voltage error integrator, a stack current error integrator (col. 5, lines 14-28).” However, *Iwase* does not teach what is alleged by the Office Action. *Iwase* discloses that “the control unit 20 has a CPU 20a, a ROM 20b, a RAM 20c, and an input/output port 20d. The CPU 20a executes desired operations in accordance with the control programs to perform various operations and controls. Pre-stored in the ROM 20b are the aforementioned control programs, the control data for use in execution of the above-mentioned operation, data regarding the output current-output power characteristics using, as a parameter, the amount or state of charge (SOC)

of the battery 40. The RAM 20c temporarily stores various data obtained by execution of the aforementioned operations. The input/output port 20d inputs the results of detection from the various sensors and sends them to the CPU 20a, and furthermore outputs control signals to the various components or elements in accordance with an instruction from the CPU 20a” (Col. 4, lines 14-28). The above-recited portion of *Iwase* is apparently referring only to battery power output and the related battery state of charge (SOC). Nowhere in the above-recited portion of *Iwase* is there any disclosure whatsoever of the alleged battery charging current error integrator, battery voltage error integrator, and stack current error integrator.

However, *Iwase* does disclose that “the SOC sensor 42 detects the state of charge (SOC) of the battery 40, and sends the result of detection to the control unit 20. More specifically, the SOC sensor 42 is formed by an SOC meter that *integrates the value of discharge or charge current with time*. Based on the integrated value, the control unit 20 calculates the amount or state of charge of the battery 40. Instead of the SOC meter, a voltage sensor for measuring output voltage of the battery 40 or a specific gravity sensor for measuring the specific gravity of the electrolyte in the battery 40 may be used as the SOC sensor 42. In this case, the control unit 20 uses the value measured by the sensor to determine the amount or state of charge of the battery 40” (Col. 4, lines 38-50, emphasis added). Although *Iwase* discloses that the SOC meter integrates the value of discharge or charge current with time, such integration is not the same as a battery charging current **error integrator**, a battery voltage **error integrator**, and a stack current **error integrator** as recited in claim 17. That is, an *integrator* is not an *error integrator*. Accordingly, the Office Action has not made a *prima facie* showing of obviousness using the teaching of *Iwase* and the rejection to claim 17 should be withdrawn for at least this reason alone.

Furthermore, claim 17 recites the feature of “an OR circuit coupled to the output of each of the error integrators to **select a greater one** of the error signals from the error integrators.” Nowhere is there any disclosure, teaching, or suggestion in either *Rey*, *Iwase*, or *Hauer* of using an OR circuit to select the greater one of the error signals (*i.e.*, battery charging current, battery voltage, and stack current). Thus, even if *Rey* is modified by *Iwase* and *Hauer*, the modified *Rey* system would still not include an OR circuit to select the greater one of the

three error signals. Accordingly, the Office Action has not made a *prima facie* showing of obviousness using the teachings of *Rey* modified by *Iwase* and *Hauer* and the rejection should be withdrawn for at least this reason alone.

f. Additional Argument for Allowability of Claim 18

With respect to claim 18, *Rey* does not disclose, teach, or suggest using at least “*a level shifter* coupled to receive the greater of the battery charging current error, the battery voltage error and the stack current error” or “*a charge pump*.” *Iwase* and *Hauer* also fail to disclose, teach, or suggest at least the above-recited feature of claim 18. Accordingly, even if *Rey* is modified by *Iwase* and *Hauer*, the modified *Rey* system would still not include the level shifter or the charge pump recited in claim 18. Therefore, a *prima facie* case establishing an obviousness rejection by *Rey* in view of *Iwase* and *Hauer* has not been made. Thus, claim 18 is not obvious under proposed combination of *Rey* in view of *Iwase* and *Hauer* and the rejection should be withdrawn.

g. Additional Argument for Allowability of Claims 22 and 23

With respect to claims 22 and 23, *Rey* does not disclose, teach, or suggest using at least “an OR circuit coupled to the output of each of the battery current integrator, the battery voltage integrator and the stack current integrator to select the greater of a value on each of the outputs” as recited in claims 22 or 23. *Iwase* and *Hauer* also fail to disclose, teach, or suggest at least the above-recited feature of claims 22 and 23. Accordingly, even if *Rey* is modified by *Iwase* and *Hauer*, the modified *Rey* system would still not include the OR circuit recited in claims 22 and 23. Therefore, a *prima facie* case establishing an obviousness rejection by *Rey* in view of *Iwase* and *Hauer* has not been made. Thus, claims 22 and 23 are not obvious under proposed combination of *Rey* in view of *Iwase* and *Hauer* and the rejection should be withdrawn for at least this reason alone.

Furthermore, *Rey* does not disclose, teach, or suggest using at least the “level shifter coupled to the OR circuit to receive the greater of the value on each of the outputs” or the “charge pump” as recited in claim 23. *Iwase* and *Hauer* also fail to disclose, teach, or suggest at



least the above-recited feature of claim 18. Accordingly, even if *Rey* is modified by *Iwase* and *Hauer*, the modified *Rey* system would still not include the level shifter or the charge pump recited in claim 23. Therefore, a *prima facie* case establishing an obviousness rejection by *Rey* in view of *Iwase* and *Hauer* has not been made. Thus, claim 23 is not obvious under proposed combination of *Rey* in view of *Iwase* and *Hauer* and the rejection should be withdrawn for at least this reason alone.

#### 5. Failure of the Office Action to Expressly Reject Claims

With respect to claim 18, the Office Action fails to even allege that the proposed combination of *Rey* modified by *Iwase* and *Hauer* renders claim 18 obvious. That is, the Office Action fails to allege that either *Rey*, *Iwase* or *Hauer* disclose, teach, or suggest anywhere any type of “*a level shifter* coupled to receive the greater of the battery charging current error, the battery voltage error and the stack current error” or “*a charge pump*.” Therefore, the Office Action’s omission of a rejection of the above-recited features of claim 18 is legally insufficient to support a rejection of claim 18 under the blanket rejection of all of the pending claims as made at page 3 of the Office Action. Accordingly, the rejection of claim 18 should be withdrawn for at least this reason alone.

Furthermore, with respect to claims 22 and 23, the Office Action fails to even allege that the proposed combination of *Rey* modified by *Iwase* and *Hauer* renders claims 22 or 23 obvious. For example, there is no allegation that the feature recited in claims 22 and 23 of the “OR circuit coupled to the output of each of the battery current integrator, the battery voltage integrator and the stack current integrator to select the greater of a value on each of the outputs” is disclosed in either *Rey*, *Iwase*, or *Hauer*. Further, there is no allegation that the features recited in claim 23 of the “level shifter coupled to the OR circuit to receive the greater of the value on each of the outputs” or the “charge pump” are disclosed in either *Rey*, *Iwase*, or *Hauer*. Therefore, the Office Action’s omission of a rejection of the above-recited features of claims 22 and 23 is legally insufficient to support a rejection of claims 22 and 23 under the blanket rejection of all of the pending claims as made at page 3 of the Office Action. Accordingly, the rejection of claims 22 and 23 should be withdrawn for at least this reason alone.

MPEP section 706.02(j) indicates that "it is important for an examiner to properly communicate the basis for a rejection so that the issues can be identified early and the applicant can be given fair opportunity to reply. ... It is important that the written record clearly explain the rationale for decisions made during prosecution of the application." Accordingly, if a rejection of claims 18, 22, or 23 is maintained, the next Office Action should specifically identify locations in *Rey* or *Iwase* and *Hauer* where the recited features of these claims are disclosed.

Furthermore, Applicant is entitled to at least one opportunity to fairly respond to a rejection under 35 U.S.C. §103 as allegedly being unpatentable by a proposed combination of *Rey* in view of *Iwase* and *Hauer*, which includes the right as a matter of law to amend claims 18, 22, or 23 to overcome a rejection based upon a proposed combination of *Rey* in view of *Iwase* and *Hauer*. ***In all of the Office Actions received to date for the pending application, claims 18, 22, or 23 have not been expressly rejected.*** That is, if an express rejection is asserted against claims 18, 22, or 23, any such rejection will be the first time that claims 18, 22, or 23 are expressly rejected in detail. Since the Applicant has not had the opportunity to respond to an expressed rejection of claims 18, 22, or 23, the Applicant should have at least one opportunity to respond to and/or amend claims 18, 22, or 23 to overcome cited art in the next Office Action.

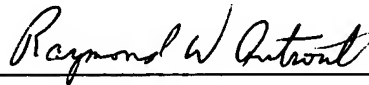
## 5. Conclusion

In light of the above remarks, Applicant respectfully submits that all objections and/or rejections have been traversed, rendered moot, and/or accommodated and that all pending claims 16-34 are allowable. Applicant, therefore, respectfully requests that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. Armentrout by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the

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claims, she is further encouraged to contact Mr. Armentrout by telephone to expediently correct such informalities.

Respectfully submitted,  
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